

AMENDMENTS TO THE CLAIMS

This listing of claims replaces all prior versions, and listings, of claims in the application:

1-12. (canceled)

13. (previously presented) A method of regenerating a catalyst comprising:
providing a reactor vessel having a first section with a first width, wherein an outwardly tapered transition portion is coupled to the first section to so increase the first width, and wherein the tapered transition portion is coupled to a second section having a second width, wherein the first section has a diameter that is less than a diameter of the second section;
feeding a carbon-contaminated catalyst and an oxygen-containing gas at a predetermined flow rate to the first section to co-currently regenerate substantially all of the catalyst in the first section;
wherein the first section is configured to provide a residence time of the oxygen-containing gas effective to selectively produce carbon monoxide from the carbon-contaminated catalyst such that a ratio of the carbon monoxide from the carbon-contaminated catalyst to carbon dioxide produced from the carbon monoxide is at least 9:1; and
wherein the second section is configured to provide a second residence time of the oxygen-containing gas and carbon monoxide effective to produce carbon dioxide from the carbon monoxide.
14. (Original) The method of claim 13 wherein the first section has a first height H1 and a first diameter D1, wherein the second section has a second height H2 and a second diameter D2, and wherein D2:D1 is at least 2.5 and H2:H1 is at least 0.6.
15. (Original) The method of claim 13 further comprising operating the first section at a temperature of less than 700 °F and operating the second section at a temperature of less than 1100 °F.